

AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) A trochoidal pump ~~characterized in that~~ comprising:

an inner rotor and an outer rotor having trochoidal toothed shapes, the inner rotor and outer rotor being ~~[[are]]~~ provided in a mutually intermeshing state~~[[, in]]~~ such ~~a manner~~ that a normal tip clearance ~~is created~~ occurs between each tooth crest of the inner rotor and the outer rotor,

~~a large clearance forming a large interval being provided in at least one location of the group of said tip clearances wherein at least one tip end of the plurality of tooth crests on at least one of the inner rotor and the outer rotor is selected appropriately and retracted such that a large clearance, which is a larger gap than the normal tip clearance, is provided by the tooth crest on the at least one of the inner rotor and the outer rotor having the retracted tip end.~~

2. (Currently Amended) The trochoidal pump according to claim 1, ~~characterized in that~~ wherein the number of teeth of said inner rotor is at least six ~~or more~~, and a large clearance is formed between said inner rotor and said outer rotor, on the plurality of tooth crests of said inner rotor, at least at every other tooth position.

3. (Currently Amended) The trochoidal pump according to claims 1, ~~characterized in that~~ wherein, taking the number of teeth of at least one of said inner rotor ~~[[or]]~~ and said outer rotor as n, large clearances d_1, d_2, \dots are arranged in one of a uniform fashion ~~[[or]]~~ and a non-uniform fashion on appropriate tooth crests of said teeth.

Serial No.: 10/616,509
Docket No.: YAF-025-US
IWA.006

4. (Currently Amended) ~~The trochoidal pump according to claim 1,~~ A trochoidal pump comprising:

an inner rotor and an outer rotor having trochoidal toothed shapes provided in a mutually intermeshing state, such that a tip clearance is created between each tooth crest of the inner rotor and the outer rotor,

wherein at least one tooth crest is retracted to form a large clearance, the large clearance being greater than the tip clearance, and

~~characterized in that the~~ a number of teeth, n , of said inner rotor is set to an even number, and ~~[[a]]~~ said large clearance is provided every other tooth on $(n/2)$ tooth crests.

5. (Currently Amended) ~~The trochoidal pump according to claim 1,~~ A trochoidal pump comprising:

an inner rotor and an outer rotor having trochoidal toothed shapes provided in a mutually intermeshing state, such that a tip clearance is created between each tooth crest of the inner rotor and the outer rotor,

wherein at least one tooth crest is retracted to form a large clearance, the large clearance being greater than the tip clearance, and

~~characterized in that the~~ a number of teeth, n , of said inner rotor is set to an odd number, and ~~[[a]]~~ said large clearance ~~[[d₁]]~~ is provided at least every other tooth position or every other two tooth positions, on $((n-1)/2)$ tooth crests.

Serial No.: 10/616,509
Docket No.: YAF-025-US
IWA.006

6. (Currently Amended) The trochoidal pump according claim 1, ~~characterized in that~~
wherein there are a plurality of said large clearances $[[d_1]]$, and all of $[[\text{these}]]$ said large
clearances ~~d_1, d_1, \dots~~ have the same interval dimension.

7. (Currently Amended) The trochoidal pump according to claim 1, ~~characterized in that~~
wherein there are a plurality of said large clearances $[[d_1]]$, and all of $[[\text{these}]]$ said large
clearances ~~d_1, d_1, \dots~~ have mutually different interval dimensions.

8. (Currently Amended) The trochoidal pump according to claim 1, ~~characterized in that~~
wherein there are a plurality of said large clearances $[[d_1]]$, and at least one of ~~all of these~~ said
large clearances ~~d_1, d_1, \dots~~ has a different interval dimension to the other large clearances
 $[[d_1]]$.

9. (Currently Amended) The trochoidal pump according to claim 1, ~~characterized in that~~
wherein said large clearances $[[d_1]]$ are formed by retracting the circumferential edges of
~~either one of~~ tooth crests of said inner rotor $[[\text{or}]]$ and tooth crests of the outer rotor.

10. (Currently Amended) The trochoidal pump according to claim 1, ~~characterized in that~~
wherein said large clearances $[[d_1]]$ are formed by retracting the circumferential edges of both
tooth crests of said inner rotor and tooth crests of the outer rotor.

Serial No.: 10/616,509
Docket No.: YAF-025-US
IWA.006

11. (Currently Amended) The trochoidal pump according to claim 2, ~~characterized in that,~~
wherein taking the number of teeth of at least one of said inner rotor ~~[[or]]~~ and said outer
rotor as n , large clearances d_1, d_2, \dots are arranged in one of a uniform fashion ~~[[or]]~~ and a non-
uniform fashion on appropriate tooth crests of said teeth.

12. (Currently Amended) ~~The trochoidal pump according to claim 2,~~ A trochoidal pump
comprising:

an inner rotor and an outer rotor having trochoidal toothed shapes provided in a
mutually intermeshing state, such that a tip clearance is created between each tooth crest of
the inner rotor and the outer rotor,

wherein at least one tooth crest is retracted to form a large clearance, the large
clearance being greater than the tip clearance,

a number of teeth, n , of said inner rotor is at least six, and said large clearance is
formed between said inner rotor and said outer rotor, on the plurality of tooth crests of said
inner rotor, at least at every other tooth position, and

~~characterized in that~~ the number of teeth, n , of said inner rotor is set to an even
number, and ~~[[a]]~~ said large clearance is provided every other tooth on $(n/2)$ tooth crests.

13. (Currently Amended) ~~The trochoidal pump according to claim 3,~~ A trochoidal pump
comprising:

Serial No.: 10/616,509
Docket No.: YAF-025-US
IWA.006

an inner rotor and an outer rotor having trochoidal toothed shapes provided in a mutually intermeshing state, such that a tip clearance is created between each tooth crest of the inner rotor and the outer rotor,

wherein at least one tooth crest is retracted to form a large clearance, the large clearance being greater than the tip clearance,

taking a number of teeth of at least one of said inner rotor and said outer rotor as n, large clearances are arranged in one of a uniform and a non-uniform fashion on appropriate tooth crests of said teeth, and

characterized in that the a number of teeth, n, of said inner rotor is set to an even number, and [[a]] said large clearance is provided every other tooth on (n/2) tooth crests.

14. (Currently Amended) ~~The trochoidal pump according to claim 2;~~ A trochoidal pump comprising:

an inner rotor and an outer rotor having trochoidal toothed shapes provided in a mutually intermeshing state, such that a tip clearance is created between each tooth crest of the inner rotor and the outer rotor,

wherein at least one tooth crest is retracted to form a large clearance, the large clearance being greater than the tip clearance,

a number of teeth, n, of said inner rotor is at least six, and the large clearance is formed between said inner rotor and said outer rotor, on the plurality of tooth crests of said inner rotor, at least at every other tooth position, and

Serial No.: 10/616,509
Docket No.: YAF-025-US
IWA.006

~~characterized in that~~ the number of teeth, n , of said inner rotor is set to an odd number, and ~~[[a]]~~ said large clearance ~~[[d₁]]~~ is provided one of at least every other tooth position ~~[[or]]~~ and every other two tooth positions, on $((n-1)/2)$ tooth crests.

15. (Currently Amended) ~~The trochoidal pump according to claim 3,~~ A trochoidal pump comprising:

an inner rotor and an outer rotor having trochoidal toothed shapes provided in a mutually intermeshing state, such that a tip clearance is created between each tooth crest of the inner rotor and the outer rotor,

wherein at least one tooth crest is retracted to form a large clearance, the large clearance being greater than the tip clearance,

taking the number of teeth of at least one of said inner rotor and said outer rotor as n , large clearances are arranged in one of a uniform and a non-uniform fashion on appropriate tooth crests of said teeth, and

~~characterized in that~~ the number of teeth, n , of said inner rotor is set to an odd number, and ~~[[a]]~~ said large clearance ~~[[d₁]]~~ is provided one of at least every other tooth position ~~[[or]]~~ and every other two tooth positions, on $((n-1)/2)$ tooth crests.

16. (Currently Amended) The trochoidal pump according claim 2, ~~characterized in that~~ wherein there are a plurality of said large clearances ~~[[d₁]]~~, and all of ~~[[these]]~~ said large clearances ~~d_1, d_1, \dots~~ have the same interval dimension.

Serial No.: 10/616,509
Docket No.: YAF-025-US
IWA.006

17. (Currently Amended) The trochoidal pump according to claim 2, ~~characterized in that~~ wherein there are a plurality of said large clearances $[[d_i]]$, and all of ~~[[these]]~~ said large clearances ~~d_1, d_2, \dots~~ have mutually different interval dimensions.

18. (Currently Amended) The trochoidal pump according to claim 2, ~~characterized in that~~ wherein there are a plurality of said large clearances $[[d_i]]$, and at least one of ~~all of these~~ said large clearances ~~d_1, d_2, \dots~~ has a different interval dimension ~~[[to]]~~ than the other large clearances $[[d_i]]$.

19. (Currently Amended) The trochoidal pump according to claim 2, ~~characterized in that~~ wherein said large clearances $[[d_i]]$ are formed by retracting the circumferential edges of ~~either~~ one of tooth crests of said inner rotor ~~[[or]]~~ and tooth crests of the outer rotor.

20. (Currently Amended) The trochoidal pump according to claim 2, ~~characterized in that~~ wherein said large clearances $[[d_i]]$ are formed by retracting the circumferential edges of both tooth crests of said inner rotor and tooth crests of the outer rotor.